

CLAIMS

What is claimed is:

1. A method for loading an antigen-presenting cell with one or more antigens, comprising:
 - a) preparing a mixture comprising antigen-presenting cells and an antigen composition comprising one or more antigens of a hyperproliferative cell, a microorganism-infected cell or a microorganism; and
 - b) electroporating the mixture in a manner sufficient to load the one or more antigens into the antigen-presenting cells.
2. The method of claim 1, wherein the antigen-presenting cell is a dendritic cell.
3. The method of claim 1, wherein the microorganism is a virus, bacterium, fungus, or protozoan.
4. The method of claim 1, wherein the microorganism-infected cell is a cell infected with a virus, bacterium, fungus, or protozoan.
5. The method of claim 1, wherein the antigen composition comprises a lysate.
6. The method of claim 5, wherein the lysate is prepared using a detergent or a non-detergent treatment.
7. The method of claim 6, wherein the non-detergent treatment is selected from the group consisting of freeze-thaw methods, sonication methods, high pressure extrusion methods, solid shear methods, liquid shear methods, and hypotonic/hypertonic methods.
8. The method of claim 1, wherein the one or more antigens are tumor-associated antigens.
9. The method of claim 8, wherein the tumor-associated antigens are recombinant tumor-associated antigens.
10. The method of claim 8, wherein the tumor-associated antigens are tumor-restricted antigens.
11. The method of claim 5, wherein the lysate comprises a tumor cell lysate.

12. The method of claim 11, wherein the tumor cell lysate is an autologous tumor cell lysate.
13. The method of claim 11, wherein the tumor cell lysate is an allogeneic tumor cell lysate.
14. The method of claim 11, wherein the tumor cell lysate comprises a cancer cell lysate.
15. The method of claim 14, wherein the cancer cell lysate is comprised of breast cancer cells, lung cancer cells, prostate cancer cells, ovarian cancer cells, brain cancer cells, liver cancer cells, cervical cancer cells, colon cancer cells, renal cancer cells, skin cancer cells, head & neck cancer cells, bone cancer cells, esophageal cancer cells, bladder cancer cells, uterine cancer cells, lymphatic cancer cells, stomach cancer cells, pancreatic cancer cells, testicular cancer cells, or leukemia cells.
16. A method of treating or preventing a disease in a subject, comprising:
 - a) loading an antigen-presenting cell with one or more antigens of a hyperproliferative cell, a microorganism, or a microorganism-infected cell using electroporation;
 - b) preparing a composition of said antigen-presenting cell; and
 - c) administering to a subject in need thereof with an effective amount of said composition.
17. The method of claim 16, further comprising culturing the antigen-presenting cell.
18. The method of claim 16, wherein the one or more antigens are substantially purified.
19. The method of claim 16, wherein the subject is a mammal.
20. The method of claim 16, wherein the subject is a human.
21. The method of claim 16, wherein the disease is a hyperproliferative disease.
22. The method of claim 21, wherein the hyperproliferative disease is a tumor.
23. The method of claim 21, wherein the tumor is a cancer.
24. The method of claim 23, wherein the cancer is breast cancer, lung cancer, prostate cancer, ovarian cancer, brain cancer, liver cancer, cervical cancer, colon cancer, renal cancer, skin

cancer, head & neck cancer, bone cancer, esophageal cancer, bladder cancer, uterine cancer, lymphatic cancer, stomach cancer, pancreatic cancer, testicular cancer, or leukemia.

25. The method of claim 16, wherein the subject is undergoing secondary anti-hyperplastic therapy.
26. The method of claim 25, wherein the secondary anti-hyperplastic therapy is chemotherapy, radiotherapy, immunotherapy, phototherapy, cryotherapy, toxin therapy, hormonal therapy, or surgery.
27. The method of claim 16, wherein the composition is delivered systemically, intravascularly, intradermally, or subcutaneously.
28. The method of claim 16, wherein the composition is delivered locally to a tumor mass.
29. The method of claim 16, wherein the antigen-presenting cells comprise dendritic cells.
30. The method of claim 16, further comprising culturing the antigen-presenting cells following the loading of the antigen-presenting cells.
31. The method of claim 16, further comprising measuring the immune response of the antigen-presenting cells following loading of the antigen-presenting cells.
32. The method of claim 31, wherein measurement of the immune response is performed *in vitro* by ELISPOT, ELISA, PCR, or tumor cell killing.
33. The method of claim 32, wherein measurement of the immune response is performed *in vivo* by measurement of tumor size.
34. A composition comprising an antigen-presenting cell, wherein said antigen-presenting cell is loaded with one or more antigens of a hyperproliferative cell, a microorganism-infected cell or a microorganism using an electroporation flow device.
35. The composition of claim 34, wherein said composition is a pharmaceutical composition suitable for delivery to a subject.
36. The composition of claim 35, wherein said subject is a human.

37. The composition of claim 34, wherein the antigen-presenting cell is a dendritic cell.